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guinea-pigs rendered epileptic in consequence of an injury to the spinal cord.

This observation derives its importance chiefly from the fact that, if epilepsy is an affection which naturally exists among guinea-pigs, it must be very rare, as I have never seen it except in the progeny of individuals operated upon and rendered epileptic; and yet the number of healthy guinea-pigs that I have kept for months is really immense. It seems therefore that we can conclude, from these observations, that epilepsy, or an affection which very much resembles it, may be transmitted from parents to offspring, even when it has been accidentally produced in one of the parents,—at least in one species of animals.

February 9, 1860.

Sir BENJAMIN C. BRODIE, Bart., President, in the Chair.

The Right Honourable Sir Edward Ryan was admitted into the Society.

The following communications were read :—

- I. "On the Resin of the *Ficus rubiginosa*, and a new Homologue of Benzylic Alcohol." By WARREN DE LA RUE, Ph.D., F.R.S., and HUGO MÜLLER, Ph.D., F.C.S. Communicated by Mr. DE LA RUE.

(Abstract.)

In this communication the authors give an account of a new alcohol homologous with benzylic alcohol ($C_{14}H_8O_2$) which they have found occurring in the state of a natural acetic ether in the exudation from an Australian plant known as the *Ficus rubiginosa*.

This acetic ether, for which they propose the name of Acetate of Sycoceryl, constitutes about 14 per cent. of the crude resin; the remainder consisting principally of an amorphous resin which they name Sycoretin.

The different degree of solubility of the various constituents in alcohol, afforded the means of the separation of the one from the other; none of them present any remarkable properties except the

new ether ; so that the authors have devoted their attention mainly to the working out of the chemical relations of this substance.

Acetate of sycoceryl, having very characteristic properties, could be readily obtained in beautiful crystals ; but some difficulty occurred in obtaining it absolutely pure, on account of the presence of a parasitical body which accompanied it constantly in solution, and always crystallized upon it. At last means were found of removing the latter substance by dissolving out the acetate of sycoceryl with ether. The per-centage composition of this parasitical body was found to be—

Carbon	76·56
Hydrogen	12·30
Oxygen	11·24

but it existed in too small a quantity to admit of its true chemical relations being made out.

Acetate of sycoceryl gave on analysis the following per-centages as the mean result of two accordant analyses :—

Carbon	79·09
Hydrogen	10·28
Oxygen	10·63

These numbers agree well with those required by the formula $C_{40}H_{32}O_4$ based upon experimental evidence.

Acetate of sycoceryl, when acted upon by sodium-alcohol, yielded acetic acid and a beautiful crystalline body resembling caffeine or asbestos ; this proved to be a new member of the benzylic alcohol series having the composition $C_{36}H_{30}O_2$, which requires the following per-centage quantities :—

		Mean of two analyses.
Carbon	82·44	82·39
Hydrogen	11·45	11·38
Oxygen	6·11	6·23

The authors, by acting with chloride of benzoyl on sycocerylic alcohol, obtained the corresponding benzoate of sycoceryl ; and by employing chloride of ethyl (acetylene), have prepared the acetate of sycoceryl which was identical with the original crystalline constituent of the resin.

By treating sycocerylic alcohol with nitric acid, an acid was procured which appears to be sycocerylic acid.

The products of the action of chromic acid on sycocerylic alcohol, were a white crystalline neutral substance and a body crystallizing in large flat prisms. The latter appears to be the sycocerylic aldehyde.

II. "Analytical and Synthetical Attempts to ascertain the cause of the differences of Electric Conductivity discovered in Wires of nearly pure Copper." By Professor WILLIAM THOMSON, F.R.S. Received December 22, 1859.

Five specimens of copper wire No. 22 gauge, out of a large number which had been put into my hands by the Gutta Percha Company to be tested for electric conductivity, were chosen as having their conductivities in proportion to the following widely different numbers, 42, 71·3, 84·7, 86·4, and 102; and were subjected to a most careful chemical analysis by Professor Hofmann, who at my request kindly undertook and carried out what proved to be a most troublesome investigation. The following report contains a statement of the results at which he arrived :—

"Royal College of Chemistry,
March 10th, 1858.

"SIR,—I now beg to communicate to you the results obtained in the analysis of the several varieties of copper wire intended for the use of the Transatlantic Telegraph Company, which you forwarded to me for examination.

"I have limited the inquiry to a *minute qualitative* analysis of the wires, to a very accurate determination of the amount of copper, and an approximative determination of the amount of oxygen. The qualitative analysis has been repeated several times with as considerable quantities as the amount of material at my disposal permitted. The *quantitative* determinations of the copper have been made with particular care, and after a lengthened scrupulous inquiry into the limit of accuracy of which the method employed is capable, I am convinced that the true per-centages of copper cannot be more than 0·1 per cent. either above or below the means of the determinations, the details of which I give you in the Appendix.

"The following Table contains the results furnished by analysis :—